Appendix F — Additional Tables

Table 12: Key habitat types and primary ecological systems (plant communities) that exist and may be potentially affected by the Proposed Action (Based on SWReGAP descriptions (USGS 2005). Not all plant species found within the project boundary may be present in this table.

Key Habitat and Associated Ecological Systems	Potential Plant/Grass Species	Scientific Name
Key Habitat — Intermountain Cold Desert Scrub	Alkali Sacoton	*Sporobolus airoides*
	Antelope Bitterbrush	*Purshia tridentata*
Ecological System — Intermountain Basins Mixed Salt Desert Scrub	Big Galleta	*Pleuraphis rigida*
Ecological System — Intermountain Basins Greasewood Flat	Bailey's Greasewood	*Sarcobatus vermiculatus* var. *baileyi*
	Baltic Rush	*Juncus balticus*
Key Habitat — Sagebrush	Big Sagebrush	*Artemisia tridentata*
	Black Sagebrush	*Artemisia nova*
Ecological System — Great Basin Xeric Mixed Sagebrush Shrubland	Bottlebrush Squirreltail	*Elymus elymoides*
	Bud Sagebrush	*Picrothamnus desertorum*
Ecological System — Inter-Mountain Basins Big Sagebrush Shrubland	Common Spikerush	*Eleocharis palustris*
	Freemont Cottonwood	*Populus fremontii*
Key Habitat — Lower Montane Woodlands	Desert Needlegrass	*Achnatherum speciosum*
	Fourwing Saltbush	*Atriplex canescens*
Ecological System — Great Basin Pinyon-Juniper Woodland	Galleta	*Pleuraphis jamesii*
Key Habitat — Springs and Springbrooks	Indian Ricegrass	*Achnatherum hymenoides*
	King Desertgrass	*Blepharidachne kingii*
Ecological System — Epemeral Springs/Springbrooks	Low Sagebrush	*Artemisia arbuscula*
	Mountain Mahogany	*Cercocarpus montanus*
Ecological System — Cold Perennial Springs/Springbrooks	Mountain Sagebrush	*Artemisia tridentata ssp. vaseyana*
Key Habitat — Intermountain Rivers and Streams	Nevada Jointfir	*Ephedra nevadensis*
	Needle and Thread Grass	*Hesperostipa comata*
Ecological System — Great Basin Foothill and Lower Montane Riparian Woodland and Shrubland	Quaking Aspen	*Populus tremuloides*
	Rubber Rabbitbrush	*Ericameria nauseosa*
Ecological System — Rocky Mountain Subalpine-Montane Riparian Woodland	Saltbush Spp	*Atriplex spp*
	Saltgrass	*Distichlis spicata*
	Sandberg Bluegrass	*Poa secunda*
	Sedge Spp.	*Carex spp.*
	Shadscale Saltbush	*Atriplex confertifolia*
	Singleleaf Pinyon	*Pinus monophylla*
	Spikerush Spp.	*Eleocharis spp.*
	Spiny Hopsage	*Grayia spinosa*
	Squirreltail	*Elymus elymoides*
	Thurber's Needlegrass	*Achnatherum thurberianum*
	Utah Juniper	*Juniperus osteosperma*
	Wild Rose	*Rosa spp.*
	Willow Spp.	*Salix spp.*

Key Habitat and Associated Ecological Systems	Potential Plant/Grass Species	Scientific Name
	Winterfat	*Krascheninnikovia lanata*
	Wyoming Big Sagebrush	*Artemisia tridentata ssp. Wyomingensis*
	Yellow Rabbitbrush	*Chrysothamnus viscidiflorus*

Table 13: Potential BLM designated sensitive species, migratory bird species of conservation concern (as per IM 2008-050), and general wildlife that may use components of the habitat within the project boundary. Not all wildlife species found on the allotment may be present in this table.

Key Habitats	Potential Wildlife Species	Scientific name	BLM Sensitive Species	Listed as per IM 2008-050 (December 18, 2007)	Primary Habitat Use Affected
Key Habitat — Intermountain Cold Desert Scrub	American Pika	*Ochotona princeps*	Yes	N/A	Food sources
	Black-Tailed Jack Rabbit	*Lepus californicus*	No	N/A	Food sources and thermal cover
	Black-Throated Sparrow	*Amphispiza bilineata*	No	No	Nesting cover
Key Habitat — Sagebrush	Brewer's Sparrow	*Spizella breweri*	No	Yes	Nesting cover
	Burrowing Owl	*Athene cunicularia*	Yes	Yes	Food sources
Key Habitat — Lower Montane Woodlands	Coachwhip	*Masticophisflagellum*	No	N/A	Food sources and thermal cover
	Common Side-Blotched Lizard	*Uta stansburiana*	No	N/A	Food sources and thermal cover
Key Habitat — Springs and Springbrooks	Coopers Hawk	*Accipiter cooperii*	No	No	Food sources
	Dark Kangaroo Mouse	*Microdipodops megacephalus*	No	N/A	Food sources and thermal cover
	Desert Bighorn Sheep	*Ovis canadensis nelsoni*	Yes	N/A	Water use
	Desert Horned Lizard	*Phrynosoma platyrhinos*	No	N/A	Food sources and thermal cover
	Desert Spiny	*Sceloporus magister*	No	N/A	Food sources and thermal cover
	Ferruginous Hawk	*Buteo regalis*	Yes	Yes	Prey base
	Golden Eagle	*Aquila chrysaetos*	Yes	Yes	Prey base
	Great Basin Collared Lizard	*Crotaphytus bicinctores*	No	N/A	Food sources and thermal cover
	Great Basin Rattlesnake	*Crotalus viridis lutosus*	No	N/A	Food sources and thermal cover
	Kit Fox	*Vulpes macrotis*	No	N/A	Prey base

Key Habitats	Potential Wildlife Species	Scientific name	BLM Sensitive Species	Listed as per IM 2008-050 (December 18, 2007)	Primary Habitat Use Affected
	Loggerhead Shrike	*Lanius ludovicianus*	Yes	Yes	Nesting cover and prey base
	Long-Eared Myotis	*Myotis evotis*	Yes	N/A	Prey base associated with spring/springbrook habitat
	Long-Nosed Leopard Lizard	*Gambelia wislizenii*	No	N/A	Food sources and thermal cover
	Mountain Lion	*Feliz concolor*	No	N/A	Prey base
	Northern Goshawk	*Accipiter gentilis*	Yes	Yes	Nesting and foraging
	Pale Kangaroo Mouse	*Microdipodops pallidus*	No	N/A	Food sources and thermal cover
	Pallid Bat	*Antrozous pallidus*	Yes	N/A	Prey base
	Pinyon Jay	*Gymnorhinus cyanocephalus*	Yes	Yes	Nesting and foraging
	Prairie Falcon	*Falco mexicanus*	Yes	Yes	Prey base
	Sage Sparrow	*Amphispiza belli*	No	Yes	Nesting cover
	Sage-Grouse	*Centrocercus urophasianus*	Yes	Yes	Potential nesting and brood-rearing cover
	Townsend's Big-Eared Bat	*Corynorhinus townsendii*	Yes	N/A	Water use near roost sites
	Western Fence Lizard	*Sceloporus occidentalis*	No	N/A	Food sources and thermal cover
	Western Whiptail	*Cnemidophorus tigris*	No	N/A	Food sources and thermal cover
	Zebra-Tailed Lizard	*Callisaurus draconoides*	No	N/A	Food sources and thermal cover

Table 14. Current land use authorizations for the Proposed Action.

Serial Number	Holder	Use Type	Authority
NVCC 0 018101	Lander County	Federal Aid Hwy (Sec. 17)	The Act of Nov. 9, 1921
NVN 0 058111	NDOT	Federal Aid Hwy (Sec. 317)	The Act of Aug. 27, 1958
NVN 0 060897	NDOT	Federal Aid Hwy (Sec. 317)	The Act of Aug. 27, 1958
NVN 0 065069	NDOT	Federal Aid Hwy (Sec. 317)	The Act of Aug. 27, 1958
NVN 001104	NDOT	Federal Hwy Materials Site (Sec. 317)	The Act of Aug. 27, 1958
NVN 001693	NDOT	Federal Hwy Materials Site (Sec. 317)	The Act of Aug. 27, 1958
NVN 005253	Sierra Pacific Power Co.	Power Transmission Line	The Act of Mar. 4, 1911
NVN 011441	Sierra Pacific Power Co.	Power Transmission Line	The Act of Mar. 4, 1911
NVN 015222	Sierra Pacific Power Co.	Power Distribution Line	The Act of Oct. 21, 1976
NVN 016367	BLM	44 LD 513 ROW Federal	The Act of Jan. 13, 1916
NVN 025576	NDOT	Federal Hwy Materials Site (Sec. 317)	The Act of Aug. 27, 1958

Serial Number	Holder	Use Type	Authority
NVN 025577	NDOT	Federal Hwy Materials Site (Sec. 317)	The Act of Aug. 27, 1958
NVN 026561	Casey / Chappell	Access Road	The Act of Oct. 21, 1976
NVN 037732	Dept. of the Navy	TACTS station (electronic warfare)	Misc. and Special
NVN 042966	Lander County	County Road	The Act of Oct. 21, 1976
NVN 045163	BLM	ROW - RAWS station	The Act of Oct. 21, 1976
NVN 058357	BLM (pending)	Admin. Withdrawal	Misc. and Special
NVN 058746	BLM	Portal Sign	The Act of Oct. 21, 1976
NVN 063003	Lander County	Free Use Permit (minerals)	The Act of Jul. 31, 1947
NVN 063299	Lander County	Free Use Permit (minerals)	The Act of Jul. 31, 1947
NVN 066394	AT&T Nevada	Communications Line	The Act of Oct. 21, 1976
NVN 073731	Dept. of the Navy	Comm. Facility (Fed.)	The Act of Oct. 21, 1976
NVN 073735	Dept. of the Navy	Comm. Facility (Fed.)	The Act of Oct. 21, 1976
NVN 073736	Dept. of the Navy	Comm. Facility (Fed.)	The Act of Oct. 21, 1976
NVN 073737	Dept. of the Navy	Comm. Facility (Fed.)	The Act of Oct. 21, 1976
NVN 073738	Dept. of the Navy	Comm. Facility (Fed.)	The Act of Oct. 21, 1976
NVN 073739	Dept. of the Navy	Comm. Facility (Fed.)	The Act of Oct. 21, 1976
NVN 074503	Dept. of the Navy	Free Use Permit (minerals)	The Act of Jul. 31, 1947
NVN 074533	Smith Creek Ranch, LLC	ROW - water facility	The Act of Oct. 21, 1976
NVN 074851	Ormat Nevada, Inc.	Geothermal Lease (non comp.)	The Act of Dec. 24, 1970
NVN 074852	Ormat Nevada, Inc.	Geothermal Lease (non comp.)	The Act of Dec. 24, 1970
NVN 074856	Ormat Nevada, Inc.	Geothermal Lease (non comp.)	The Act of Dec. 24, 1970
NVN 074866	Ormat Nevada, Inc.	Geothermal Lease (non comp.)	The Act of Dec. 24, 1970
NVN 074867	Ormat Nevada, Inc.	Geothermal Lease (non comp.)	The Act of Dec. 24, 1970
NVN 076179	Sierra Pacific Power Co.	Communications Line	The Act of Oct. 21, 1976
NVN 078572	Ormat Nevada, Inc.	Geothermal Lease (non comp.)	The Act of Dec. 24, 1970
NVN 079287	NV Division of State Lands	Communications Facility	The Act of Oct. 21, 1976
NVN 079720	Sierra Pacific Power Co.	Power Distribution Line	The Act of Oct. 21, 1976
NVN 079989	Plate Boundary Observatory UNAVCO, Inc.	ROW - FLPMA other	The Act of Oct. 21, 1976
NVN 084354X	Ormat Nevada, Inc.	Geothermal Unit Agreement	The Act of Dec. 24, 1970
NVN 088010	Lander County	Free Use Permit (minerals)	The Act of Jul. 31, 1947
NVN 088066	Sierra Pacific Power Co.	Power Transmission Line	The Act of Oct. 21, 1976
NVN 088136	Lander County	Free Use Permit (minerals)	The Act of Jul. 31, 1947
NVN 088137	Lander County	Free Use Permit (minerals)	The Act of Jul. 31, 1947
NVN 088141	Lander County	Free Use Permit (minerals)	The Act of Jul. 31, 1947
NVN 088287	Lander County	Free Use Permit (minerals)	The Act of Jul. 31, 1947

Table 15. Soil series and associations found in the direct treatment areas.

Map Unit / County	Surface Texture	Map Unit Name	Dominant Parent Material	Slope	Acres in Direct Treatment Areas
321/Churchill	very gravelly loam	Jung-Desatoya-Roca association	mixed alluvium	23	1960
325/Churchill	very gravelly loam	Jung-Old Camp-Clanalpine association	residuum and colluvium derived from volcanic rocks	40	140

Map Unit / County	Surface Texture	Map Unit Name	Dominant Parent Material	Slope	Acres in Direct Treatment Areas
351/Churchill	gravelly loam	Ricert-Chilper-Pineval association	mixed alluvium	6	8
370/Churchill	stony loam	Duco-Clanalpine-Jung association	residuum and colluvium derived from volcanic rocks	23	252
373/Churchill	stony loam	Duco-Itca-Puett association	residuum and colluvium derived from volcanic rocks	33	10
380/Churchill	stony loam	Itca-Clanalpine-Rock outcrop association	residuum and colluvium derived from volcanic rocks	63	1072
381/Churchill	very stony loam	Itca-Reluctan-Walti association	residuum and colluvium derived from volcanic rocks	40	1060
410/Churchill	gravelly loam	Buffaran-Desatoya association	mixed alluvium	6	38
492/Churchill	gravelly loam	Pineval-Rebel association	mixed alluvium	10	550
591/Churchill	loam	Rebel loam, 0 to 2 percent slopes	mixed alluvium	1	12
740/Churchill	very gravelly loam	Packer-Layview-Hapgood association	residuum and colluvium derived from volcanic rocks	33	1887
741/Churchill	extremely gravelly loam	Packer-Hapgood-Rock outcrop association	residuum and colluvium derived from volcanic rocks	12	32
1284/Lander	very gravelly very fine sandy loam	Ricert-Zineb-Pineval association	loess over alluvium derived from mixed rock	3	3
2089/Lander	very gravelly loam	Punchbowl-Jung-Locane association	residuum weathered from volcanic rock	33	580
2090/Lander	gravelly loam	Punchbowl gravelly loam, 4 to 15 percent slopes	residuum weathered from volcanic rock	10	392
2091/Lander	very gravelly loam	Punchbowl-Teguro-Sumine association	residuum weathered from volcanic rock	23	824
2542/Lander Co.	gravelly loam	Buffaran-Chiara association	alluvium derived from mixed rock	5	374
2543/Lander	gravelly loam	Buffaran-Spasprey-Allor association	alluvium derived from mixed rock	5	692
2547/Lander	gravelly loam	Buffaran-Desatoya association	alluvium derived from mixed rock	6	61
2782/Lander	gravelly loam	Desatoya-Pineval-Grassval association	alluvium derived from mixed rock	12	131

Map Unit / County	Surface Texture	Map Unit Name	Dominant Parent Material	Slope	Acres in Direct Treatment Areas
3092/Lander	extremely gravelly loam	Packer-Hapgood-Rock outcrop association	volcanic ash and/or loess and/or residuum weathered from shale and/or residuum weathered from chert and/or residuum weathered from quartzite and/or residuum weathered from volcanic rock	12	164
3093/Lander	very gravelly loam	Packer-Layview-Hapgood association	volcanic ash and/or loess and/or residuum weathered from shale and/or residuum weathered from chert and/or residuum weathered from quartzite and/or residuum weathered from volcanic rock	33	900
3123/Lander	very cobbly loam	Walti-Softscrabble-Itca association	colluvium derived from mixed rock and/or residuum weathered from mixed rock	12	1318
3134/Lander Co.	extremely cobbly fine sandy loam	Itca-Clanalpine-Torro association	residuum weathered from pyroclastic rock and/or residuum weathered from volcanic rock	23	9764
3135/Lander	stony loam	Itca-Clanalpine-Rock outcrop association	colluvium derived from tuff and/or residuum weathered from tuff	63	1030
3154/Lander	very gravelly loam	Robson-Locane-Rock outcrop association	residuum weathered from igneous rock	12	482
3421/Lander	very gravelly loam	Belate-Softscrabble-Torro association	colluvium derived from andesite and/or colluvium derived from tuff and/or residuum weathered from andesite and/or residuum weathered from tuff	23	840
3463/Lander	extremely gravelly loam	Torro-Clanalpine-Itca association	volcanic ash and/or colluvium derived from chert and/or colluvium derived from shale and/or loess and/or residuum weathered from shale and/or residuum weathered from chert	40	1010
3465/Lander	extremely gravelly loam	Torro-Clanalpine-Softscrabble association	volcanic ash and/or colluvium derived from chert and/or colluvium derived from shale and/or loess and/or residuum weathered from shale and/or residuum weathered from chert	40	1292
3562/Lander	gravelly loam	Locane-Coztur-Punchbowl association	residuum weathered from conglomerate and/or residuum weathered from shale and/or residuum weathered from tuff	12	340
3841/Lander	very cobbly loam	Jung-Itca-Roca association	residuum weathered from volcanic rock and/or residuum weathered from metavolcanics	23	5174
3847/Lander	very gravelly loam	Jung-Old Camp-Clanalpine association	residuum weathered from volcanic rock and/or residuum weathered from metavolcanics	40	273

Map Unit / County	Surface Texture	Map Unit Name	Dominant Parent Material	Slope	Acres in Direct Treatment Areas
3881/Lander	gravelly loam	Layview-Packer-Hapgood association	residuum weathered from tuff and/or residuum weathered from rhyolite and/or residuum weathered from andesite	10	36

Table 16. Protocol for determining operability of soils based on soil moisture at 4-8 inch depth.

Soil Moisture % Increases Downward	Coarse soils: loamy sands, fine sand loam, very fine sands, coarse sands	Light soils: Fine sandy loams, sandy loams, very fine sandy loam	Medium soils: (<35% clay) Sandy clay loam, loam, silt loam, sandy clay loam, clay loam	Heavy soils: (<35% clay) Clay loam, sandy clay, silty clay loam, clay
Dry soils	Dry, loose, single grained flows thru fingers	Dry, loose, flows thru fingers	Powdery, dry, sometimes slightly crusted but breaks down into powdery conditions	Hard, baked, cracked sometimes has loose crumbs on surface
Slightly moist soil	Still appears dry, would not form a ball with pressure	Still appears to be dry; would not form a ball	Somewhat crumbly, but would hold together from pressure	Somewhat pliable; would form ball under pressure. At plastic limit.
Moist soil	Still appears dry, would not form a ball with pressure	Tends to ball under pressure but seldom would hold together	Forms a ball and is very pliable, sticks readily if high in clay.	Easily ribbons out between fingers, has a slick feeling. At plastic limit.
Very moist soil	Tends to stick together slightly, sometimes forms a very weak ball	Forms a weak ball breaks easily, would not stick. Plastic limit or nonplastic.	Forms a ball and is very pliable, sticks readily if high in clay. Exceeds plastic limit.	Easily ribbons out between fingers, has a slick feeling. Exceeds plastic limit.
Wet soils	Upon squeezing, free water may appear. Wet outline is left on hand. Nonplastic.	Upon squeezing free water may appear. Wet outline left on hand.	Can squeeze out free water. Wet outline left on hand.	Puddles and free water forms on surface. Wet outline left on hand.

Recommended not operable by USFS Regional Soil Scientist
Proposed additional restriction based on Bob Powers (USFS PSW Soil Scientist) comment